## SEQ. ID. NO.:1

```
GAGACTGCAGCAGAATATGTAAAATCTCGACTCCCAGAGGCTCTTAAGC
AGCACCTTCAGGATTATGAGAAGGACAAAGAAAACAGTGTTCTGACCTA
CCAGACCATCCTCGAGCAGCAGATCTTGTCAATTGACCGGGAAATGCTG
GAAAAGTTGACAGTCTCCTATGATGAAGCAGGCACAACGTGTTTGATCS
CTCTACTCTCAGATAAAGACCTCACCGTGGCCAACGTTGGTGACTCTCG
GGGAGTCTTGTGTGACAAAGATGGCAATGCCATCCCCTTGTCTCACGAT
CACAAGCCTTACCAGCTGAAGGAAAGGAAGAGGATAAAGAGAGCTGGTG
GGTTCATCAGCTTTAATGGCTCCTGGAGGGTCCAGGGAATCCTAGCCAT
GTCTCGATCCCTGGGAGACTATCCACTGAAAAATCTCAACGTGGTCATC
CCAGACCCAGACATCTTGACCTTTGACCTGGACAAGCTGCAGCCGGAGT
TCATGATCTTGGCCTCAGATGGCCTGTGGGA:TGCTTTCAGCAATGAAG
AAGCGGTTCGATTCATCAAGGAGCGCTTGGATGAGCCCCACTTTGGGGC
CAAAAGCATCGTCCTGCAGTCCTTTTACAGAGGCTGCCCTGACAACATC
ACTGTCATGGTGGTGAAGTTCAGGAATAGTAGCAAAACAGAAGAGCACT
GAACCCTGCCAGATCTCAGCTGCCCCAAACTAGAGGACTCTCAACATAC
TGTTCTCTTCATGTAGTAAAAGGTGTGGGTATAATTAGGATCATGCGTC
CCAACACAGAACCCCCTTCCCTGATGGCCTTGAATCCCTTTGGAGTACT
GAGCAGAGGGTTGGTTCCCTTGCTGACACCGCAGAGGCTGCTAAGTTTG
TGTCCCCCCAGCCCTTCTATCAGTGTTTGAAACACATACGTAGGTAGCC
ACAGATCCCACATATGAGGCAAAGGAAAGGCAGGCCATATGTTTTCCTT
CTTAATAATGTACTTTT
```

## SEQ. ID. NO.:2

```
ETAAEYVKSRLPEALKQHLQDYEKDKENSVLTYQTILEQQILSIDREML
EKLTVSYDEAGTTCLIXLLSDKDLTVANVGDSRGVLCDKDGNAIPLSHD
HKPYQLKERKRIKRAGGFISFNGSWRVQGILAMSRSLGDYPLKNLNVVI
PDPDILTFDLDKLQPEFMILASDGLWDAFSNEEAVRFIKERLDEPHFGA
KSIVLQSFYRGCPDNITVMVVKFRNSSKTEEH
```

**FIGURE 1**

Underlined = deleted in targeting construct

**Bold** = sequence flanking Neo insert in targeting construct

GAGACTGCAGCAGAATATGTAAAATCTCGACTCCCAGAGGCTCTTAAGCAGCACCTTCAG
GATTATGAGAAGGACAAAGAAAACAGTGTTCTGACCTACCAGACCATCCTCGAGCAGCAG
ATCTTGTCAATTGACCGGGAAATGCTGGAAAAGTTGACAGTCTCCTATGATGAAGCAGGC
ACAACGTGTTTGATCSCTCTACTCTCAGATAAAGACCTCACCGTGGCCAACGTTGGTGAC
TCTCGGGGAGTCTTGTGTGACAAAGATGGCAATGCCATCCCCTTGTCTCACGATCACAAG
CCTTACCAGCTGAAGGAAAGGAAGAGGATAAAGAGAGCTG**GTGGGTTCATCAGCTTTAAT**
**GGCTCCTGGAGGGTCCAGGGAATCCTAGCCATGTCTCGATCCCTGGGAGACTA**<u>TCCACTG</u>
<u>AAAAATCTCAACGTGGTCATCCCAGACCCAGACATCTTGACCTTTGACCTGGACAAGCTG</u>
<u>CAGCCGGAGTTCATGATCTTGGCCTCAGATGGCCTGTGGGA : TGCTTTCAGCAATGAAGA</u>
<u>AGCGGTTCGATTCATCAAGGAGCGCTTGGATGAGCCCCACTTTGGGGCCAAAAGCA</u>**TCGT**
**CCTGCAGTCCTTTTACAGAGGCTGCCCTGACAACATCACTGTCATGGTGGTGAAGTTCAG**
**GAATAGTAGCAAAACAGAAGAGCACTGAACCCTGCCAGATCTCAGCTGCCCCAAACTAGA**
**GGACTCTCAACATACTGTTCTCTTCATGTAGTAAAAGGTGTGGGTATAATTAGGATCATG**
**CGTCCCAACACAGAACCCCCTTCCCTGATGGCCTTGAATCCCTTTGGAGTACTGAGCAGA**
**GGGTTGGTTCCCTTGCTGACACCGCAGAGGCTGCTAAGTTTGTGTCCCCCCAGCCCTTCT**
**ATCAGTGTTTGAAACACATACGTAGGTAGCCACAGATCCCACATATGAGGCAAAGGAAAG**
**GCAGGCCATATGTTTTCCTTCTTAATAATGTACTTTT**
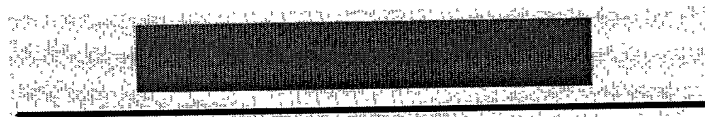
FIGURE 2A

Gene Sequence
Structure *
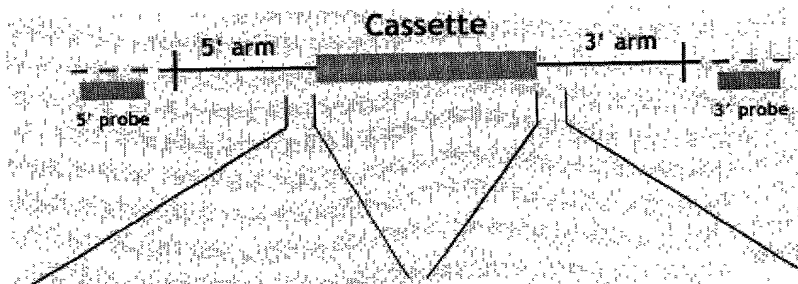
414 bp          Sequence Deleted          596 bp

Size of EST
contig:  997 bp

Targeting Vector* (genomic sequence)          LacZ-Neo

Construct Number: 2867

Cassette

5' arm          3' arm

5' probe          3' probe

Arm Length:
5': 3.9 kb
3': 2.9 kb

——— Targeting Vector
– – – – – Endogenous Locus

* Not drawn to scale

5'>GCTGGTGGCCTTGGCAGTGAC
GAAGGTGAAGGAGGGGTGCTTGTG
GCTCAGCTCTGTTGCAGCAGACCA
GCTTGTGGTACACTCACCCAGACC
GGAACAAGCTAACAGGCTCCCTCT
GTCTTTCCAGGTGGGTTCATCAGC
TTTAATGGCTCCTGGAGGGTCCAG
GGAATCCTAGCCATGTCTCGATCC
CTGGGAGACTA<3'

(SEQ ID NO: 3)

5'>TCGTCCTGCAGTCCTTTTACA
GAGGCTGCCCTGACAACATCACTG
TCATGGTGGTGAAGTTCAGGAATA
GTAGCAAAACAGAAGGGCACTGAA
CCCTGCCAGATCTCAGCTGCCCCA
AACTAGAGGACTCTCAACATACTG
TTCTCTTCATGTAGTAAAAGGTGT
GGGTATAATTAGGATCATGCGTCC
CAACACAGAAC<3'

(SEQ ID NO: 4)

**FIGURE 2B**